

Factor each polynomial by finding the GCF.

1. $3x - 12$ _____

2. $8z^2 - 4z$ _____

3. $5x^2 - 5x - 20$ _____

4. $q^6 - q^3$ _____

5. $9x^2 + 36x + 15$ _____

6. $12s^2 - 6s + 8$ _____

Factor by grouping.

25. $3a + ax + 3b + bx$ _____

26. $xy - y + 3x - 3$ _____

27. $cd - 3c + 2d - 6$ _____

28. $x^2 + 5x + 3x + 15$ _____

29. $ax + 3x + ay + 3y$ _____

30. $x^2 - 5x - 2x + 10$ _____

31. $y^2 + 5y + 5y + 25$ _____

32. $8x^2 - 6x - 12x + 9$ _____

Factor by using the rule for factoring the difference of two squares.

9. $w^2 - x^2$ _____

10. $9d^2 - c^2$ _____

11. $25 - k^2$ _____

12. $4f^2 - 49g^2$ _____

13. $16y^2 - 81z^2$ _____

14. $64s^2 - 25$ _____

15. $25 - 36d^2$ _____

16. $100a^2 - 9$ _____

Factor each trinomial. If a trinomial cannot be factored, write *prime*.

1. $r^2 + 16r - 36$ _____

2. $6x^2 + 13x - 5$ _____

3. $5c^2 + 12c + 7$ _____

4. $2x^2 - x - 3$ _____

5. $3h^2 + 19h + 20$ _____

6. $2d^2 + 7d - 15$ _____

7. $2g^2 - 17g + 36$ _____

8. $4t^2 - t - 60$ _____

9. $6w^2 - w - 35$ _____

10. $6h^2 - 31h + 30$ _____

11. $4z^2 + 19z - 12$ _____

12. $4y^2 - 36y + 45$ _____